



ASSESSMENT SUMMARY v1.0.0

Comma-Separated Values (CSV)¹

IETF²

¹ CSV Reference: <https://datatracker.ietf.org/doc/html/rfc4180>

² IETF Reference: <https://www.ietf.org/>

Change Control

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1. INTRODUCTION

The present document is a summary of the assessment of **CSV** carried out by CAMSS using the CAMSS Assessment EIF scenario³. The purpose of this scenario is to assess the compliance of a standard or specification with the European Interoperability Framework (EIF)⁴.

2. ASSESSMENT SUMMARY

The Comma-Separated Values (CSV) format has been used for exchanging and converting data between various spreadsheet programs for quite some time. Additionally, while the IANA MIME registration tree includes a registration for "text/tab-separated-values" type, no MIME types have ever been registered with IANA for CSV.

2.1. EIF Interoperability Principles

Interoperability principles are fundamental behavioural aspects that drive interoperability actions. They are relevant to the process of establishing interoperable European public services. They describe the context in which European public services are designed and implemented.

The specification fully supports the principles setting context for EU actions on interoperability:

- **Subsidiarity and proportionality**

CSV is included in 12 national catalogues of recommended specifications. They belong to the Netherlands, Estonia, Sweden, and Spain, among others. The National Interoperability Framework (NIF) of these Member States is fully aligned with at least 2 out of 3 sections of the European Interoperability Framework (EIF) according to the National Interoperability Framework Observatory (NIFO) factsheets⁵.

The specification fully supports the principles setting context for EU actions on interoperability:

- **Openness**

CSV is one of the main points on the publication of Open Data. Using the specification 3 out of 5 stars from Tim Berners Lee's schema for open data are supported. Moreover, some initiatives for the publication of European Organisations data as open data, consequently Linked Open Data have their datasets stored in CSV format. An example of it is the EU Open Data Portal. CSV can be considered a facilitator to publish public administrations data as open data. As 5 Stars Open Data model of Tim Berners-Lee states, CSV makes sure content is available on the web, structures data and makes it usable in a non-proprietary open format.

³ CAMSS Assessment EIF Scenario 6.0: <https://ec.europa.eu/eusurvey/runner/CAMSSAssessmentEIFScenario6>

⁴ ISA² programme: https://ec.europa.eu/isa2/eif_en

⁵ NIFO Factsheet Reference: <https://joinup.ec.europa.eu/collection/nifo-national-interoperability-framework-observatory/digital-public-administration-factsheets-2022>

The specifications promote innovation as CSV Dialect to simplify the format to be able to describe various CSV dialects. Due to its simplicity, compatibility, and versatility, CSV is widely used across various industries and domains. It is commonly employed for data import/export, data integration, data migration, data transformation, and other scenarios where tabular data needs to be exchanged between different systems or processed programmatically.

- **Transparency**

As a common data exchange format, CSV fosters the visibility and comprehensibility of administration's data and scope comprehensibly the administrative rules, data and services. It eases the publication of structured data for the consumption by the different stakeholders. Therefore, CSV fosters the visibility of administrations data. Additionally, it can be used internally easing as well as the decision-making process.

- **Reusability**

CSV is a sector agnostic specification that can be reused when structured data needs to be exchanged. Additionally, CSV is designed to enable you to reuse the same schema when publishing multiple CSV files, even if those files are created by different organisations and therefore reside in different places.

CSV makes sure content is available on the web, structures data and makes it usable in a non-proprietary open format. So, it can be said that CSV is independent from any technology or platform. Therefore, reside in different places.

- **Technological neutrality and data portability**

CSV makes sure content is available on the web, structures data and makes it usable in a non-proprietary open format. So, it can be said that CSV is independent from any technology or platform. Therefore, reside in different places.

Consequently, CSV fosters data portability as the specification makes files available for any system. The specification does not include any reference related to the possibility of being partially used, so it can be assumed CSV has to be used as a whole.

By using a standard format, different systems and applications can exchange legal documents in a common language, which can help to avoid compatibility issues and ensure interoperability.

The specification partially supports the principles related to generic user needs and expectations:

- **User-centricity**
Whenever the user intends to use or reuse the CSV specification, information needs to be provided every time.
- **Inclusion and accessibility**
The purpose of CSV is not related to e-accessibility. Therefore, this criterion is not applicable to the specification.
- **Security**
The purpose of CSV is not related to security and privacy of the data exchange. Therefore, this criterion is not applicable to the specification.

The CSV specification itself does not provide any built-in means for guaranteeing the authenticity and authentication of the role's agents involved in the data transactions. Although the CSV specification does not provide these features directly, they can be implemented in conjunction with the systems or applications that handle CSV files to ensure proper access control and data protection. As the header parameter of the CSV specification indicates the presence or absence of the header line, some valid values for this header are "present" or "absent", which can enable data processing accuracy.

- **Privacy**
The specification itself does not inherently provide any built-in mechanisms for ensuring the protection of personal data managed by Public Administrations. CSV is a simple, plain text format primarily designed for storing and exchanging tabular data.

The CSV specification itself does not provide any built-in means for restricting access to information or data. While the CSV specification does not provide these features directly, they can be implemented in conjunction with the systems or applications that handle CSV files to ensure proper access control and data protection.

- **Multilingualism**
The purpose of CSV is not related to the delivery of multilingual public services. Therefore, this criterion is not applicable to the specification.

The specification supports the foundation principles for cooperation among public administrations:

- **Administrative Simplification**
CSV makes sure content is available on the web, structures data and makes it usable in a non-proprietary open format. Consequently, the CSV fosters the simplification of the delivery of European public services as it makes files available for any system.

- **Preservation of information**

The specification can be migrated from older CSV versions to newer formats or standards to ensure that the data remains accessible and usable in the future. CSV can also implement robust storage and backup strategies, including redundancy, data replication, and regular backups, helps mitigate the risk of data loss or corruption. It is crucial to store CSV files in reliable and secure storage systems to ensure their long-term preservation.

- **Assessment of effectiveness and efficiency**

CSV has documentation regarding Use Cases⁶ and Requirements which analyses its effectiveness & efficiency.

2.2. EIF Interoperability Layers

The interoperability model which is applicable to all digital public services includes:

- Four layers of interoperability: legal, organisational, semantic and technical;
- A cross-cutting component of the four layers, 'integrated public service governance';
- A background layer, 'interoperability governance'.

The Specification supports the implementation of digital public services complying with the EIF interoperability model:

- **Interoperability governance**

The specification is associated with EIRA⁷ ABBs in the EIRA Library of Interoperability Specifications (ELIS)⁸. It is associated with the Legal Act Representation, Open Data and Representation from the Semantic View.

There are several CSV conformance validators available. An example is CSV Lint, which provides a conformance validation for its readability. Another example is CSV Validator from The National Archive of United Kingdom. This validator provides tools for validating CSV by using CSV Schema.

12 Member States are recommending CSV in their ICT National Catalogues. Among those Member States recommending the specification, there is Spain⁹ as an example.

- **Legal Interoperability**

The specification is not a European Standard.

⁶ CSV use Case on the Web: <https://www.w3.org/TR/csvw-ucr/>

⁷ EIRA: <https://joinup.ec.europa.eu/collection/european-interoperability-reference-architecture-eira/solution/eira/release/v500>

⁸ ELIS: <https://joinup.ec.europa.eu/collection/common-assessment-method-standards-and-specifications-camss/solution/elis/elis-dashboard>

⁹ Spain National Catalogue: https://administracionelectronica.gob.es/pae/Home/dam/jcr:9e2c2877-5103-4934-8440-c60ba2e10c48/Catalogue_of_Standards_NIF_Spain.pdf

- **Organisational interoperability**

The purpose of CSV is not related to the modelling of business processes nor organisational interoperability. Therefore, these criteria are not applicable to the specification.

- **Semantic Interoperability**

As the specification comes from the IETF community, different initiatives surrounding CSV encourages the creation of communities that work on the specification and digital solutions.

3. ASSESSMENT RESULTS

This section presents an overview of the results of the CAMSS assessments for **CSV**. The CAMSS “Strength” indicator measures the reliability of the assessment by calculating the number of answered (applicable) criteria. On the other hand, the number of favourable answers and the number of unfavourable ones is used to calculate the “Automated Score” per category and an “Overall Score”.

Category	Automated Score	Assessment Strength	Compliance Level
Principle setting the context for EU actions on interoperability	100/100 (100%)	100%	Seamless
Core interoperability principles	1460/1700 (86%)	94%	Seamless
Principles related to generic user needs and expectations	760/1200 (63%)	67%	Sustainable
Foundation principles for cooperation among public administrations	500/500 (100%)	100%	Seamless
Interoperability layers*	920/1000 (92%)	80%	Seamless
Overall Score	3040/3800 (80%) ¹⁰	84%	

**The technical interoperability layer is covered by the criteria corresponding to the core interoperability principle "Openness".*

With an 84% of assessment strength, this assessment can be considered representative of the specification compliance with the EIF principles and recommendations.

The Overall Automated Score of 80% (3040/3800) demonstrates that the specification supports the European Interoperability Framework in the domains where it applies.

¹⁰ See the “results interpretation” section of the CAMSS Assessment EIF Scenario Quick User Guide:

<https://joinup.ec.europa.eu/collection/common-assessment-method-standards-and-specifications-camss/solution/camss-assessment-eif-scenario/results-visualisation-and-interpretation>